Claims

1. A method for efficient routing in a multiple hop wireless communication
    network characterized in that data packets are routed over transmission
5   paths using the following steps:
        providing link status information by acquiring link status quality
        between nodes in the network;   *using a beacon signal;*
        updating a routing element (101) with said link status information;
        determining possible routes with essentially similar link quality
10   status for said data packet; and
        routing said data packet via the determined routes.

2. The method according to claim 1 further comprising the step of
    combining said data packets at a destination node.

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3. The method according to any of above claims further comprising the
    step of replacing one of said data packets with parity bits for error
    detection and error correction purposes.

20 4. The method according to any of above claims characterized in that said
    wireless link comprise the step of using a transmission system based on
    electromagnetic radiation with a frequency in the range of 100 kHz to
    100 PHz.

25 5. The method according to claim 4 characterized in that said transmission
    system comprise the step of using a transmission system from one or
    several of the following radio standards: IEEE 802.11, IEEE 802.15,
    IEEE 802.16 HiperLAN, HomeRF, Bluetooth, IR, UWB, JTRS, 3G, GPRS,
    and EDGE.

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6. A system for efficient routing in a communication network having a
    plurality of nodes, each node comprising
        link status acquiring (3001) means for acquring information about
        link status between neighboring nodes;
35   updating means (102) for updating routing means (101) with said
        link status information;
        determination means (3002) using said link status information for
        determining possible routes for routing of a data packet; and

routing means (101) for routing said data packet via said determined routes.

7. A system according to claim 6 wherein communication between said nodes is wireless.

8. A system according to claim 7 wherein the communication network is an ad hoc network.

9. The system according to claim 6 comprising the step of replacing one of said data packets with parity bits for error detection and error correction purposes.

10. The system according to claim 7 characterized in that said wireless communication comprise a transmission system based on electromagnetic radiation with a frequency in the range of 100 kHz to 100 PHz.

11. The system according to claim 10 characterized in that said transmission system is one or several of the following radio standards: IEEE 802.11, IEEE 802.15, IEEE 802.16 HiperLAN, HomeRF, Bluetooth, IR, UWB, JTRS, 3G, GPRS, and EDGE.

12. A node (800) in a communication network having a plurality of nodes, said node comprising

processing means (801) for processing network control information;
storing means (802) for storing network control information;
transmission means (805) for transmitting data packets;
link status acquiring means (3001) for acquiring link information comprising link status and link quality between neighboring nodes;
determination means (3002) using acquired link information for determining at least two routes to a destination for routing of a data packet; and
routing means for routing said data packets via said determined routes.

13. The node (800) according to claim 12 wherein communication between nodes is wireless.

14. The node (800) according to claim 13 wherein said communication network is an ad hoc network.

15. The node (800) according to claim 12 comprising the step of replacing one of said data packets with parity bits for error detection and error correction purposes.

16. The node (800) according to claim 12 characterized in that said wireless communication comprise a transmission system based on electromagnetic radiation with a frequency in the range of 100 kHz to 100 PHz.

17. The node (800) according to claim 16 characterized in that said transmission system is one or several of the following radio standards: IEEE 802.11, IEEE 802.15, IEEE 802.16 HiperLAN, HomeRF, Bluetooth, IR, UWB, JTRS, 3G, GPRS, and EDGE.

18. A wireless communication network comprising a system according to any of claims 6 – 11, comprising one or several nodes according to any of claims 12- 17.

19. A computer program in a node in a wireless communication network, the program comprising:

a first instruction set for acquiring link status information between nodes in the network;

a second instruction set for updating a routing element (101) with said link status information;

a third instruction set for determining possible routes with essentially similar link quality status; and

a fourth instruction set for routing a data packet via said determined routes.